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ABSTRACT

Phonetic symbolism implies that there are intrinsic relationships between sounds employed in words and the meanings of the words. Research in phonetic symbolism and how it operates has implications for foreign language learning. Such research seeks to determine whether one's capacity for correctly guessing the meanings of words in another language (made possible by phonetic symbolism) is an endurable characteristic or something temporary, and whether one's capacity to guess the meanings of words in another language influences one's facility in learning those words. Experiments reported here seek answers to these questions and apply the answers to the subject of vocabulary selection in elementary foreign language textbooks. (VM)

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Phonetic Symbolism: Its Stability and Effects on Verbal Learning

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Phonetic symbolism implies that there are intrinsic relationships between sounds employed in words and the meanings of the words. When common intrinsic relationships between sounds and meanings are conceived to exist among all languages, it is called universal phonetic symbolism.

Taylor (1963) rejected universal phonetic symbolism and proposed, instead, that the phonetic symbolism pattern is different in each unrelated language system. Taylor and Taylor (1965), in criticizing the word-matching experiments, pointed out the possibility of bias through selective translation and the possible influence of expressive voice quality in the choice of correct alternative, thus, contributing toward better than chance cross-language matching. Kunihira (1971) demonstrated that their contention was valid when English-speaking Ss guessed the meanings of the Japanese antonyms which were pronouced in a monotone voice or in an expressive voice.

Most of the effort in the investigation of the phenomenon since Sapir (1929) has been to examine the existence of the phenomenon in different languages. Except for a few, the studies in general supported the existence of phonetic symbolism. However, it has not been made clear whether one's capacity for correctly guessing the meanings of words in another language is an endurable characteristic or something temporary. Another question of interest that has not been empirically answered is the relationship between phonetic symbolism and verbal learning, that is, the question if one's capacity to guess the meanings of words

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in another language influences one's facility in learning those words. The studies reported here were conducted to provide partial answers to these questions.

In the first study, from a longer list containing alternative translations of antonym pairs, two lists were constructed, one with translations which received high guessing rates and another with those which received low guessing rates. These two "selective translation" lists called the Hi-Ph list and the Lo-Ph list were compared if they actually produced significantly different guessing rates.

Subjects. College students in colleges who are enrolled in introductory psychology courses served as subjects. The sexes were distributed about equally within the groups. All students who had any amount of familiarity with the Japanese language were rejected as Ss.

Procedure. College students (N = 106) guessed the meanings of Japanese words in antonym pairs with the word-matching technique. They read English and Japanese (in Romanized spelling) antonym pairs in printed form (the graphemic condition) and indicated which word in the Japanese pair meant the same as the underlined word in the English pair. In another condition (graphemic-monotone) Ss (N = 93) responded as they heard the Japanese pairs pronounced in a monotone voice and read the printed words.

The list of antonym pairs contained 44 pairs, of which 10 were randomly chosen antonym pairs and the rest were antonym pairs that lent themselves to two alternative translations in Japanese (e.g., awake - sleep: okiru - neru, and sameru - nemuru).

English and Japanese antonym pairs were printed on 8.5 x 11 in. sheets. The order of presentation of the antonym pairs, the sequence of the members in

each antonym pair for both Japanese and English, and the English words selected for underlining were randomly determined with a constraint that the same antonym pair did not appear on the same sheet. Two such lists were constructed and about equal numbers of Ss responded to either one of the lists. Subjects' response was not paced. The proportion of correct guesses was computed for each alternative translation in Japanese.

Two lists with 16 pairs of antonyms in each, one with pairs that indicated large proportions of correct guesses (Hi-PS list) and the other with those that showed smaller proportions of correct guesses (Lo-PS list), were constructed to confirm if "selective translation" thus produced resulted in differential correct guessing rates. Forty-nine and 54 Ss guessed the meanings of the Japanese words in the Hi-PS and the Lo-PS lists, respectively.

Results. When the mean numbers of correct matches were compared between the Hi-PS lists and the Lo-PS lists, the differences were significant under both the graphemic and the graphemic-monotone conditions, $t\ (101) = 4.83$, $p < .001$, and $t\ (126) = 6.57$, $p < .001$, respectively. The Hi-PS lists resulted in better than chance guessing (hypothetical mean of 8.00) under both the graphemic and the graphemic-monotone conditions, $t\ (48) = 3.15$, $p < .01$, and $t\ (65) = 7.45$, $p < .001$, respectively. On the other hand, the Lo-PS lists resulted in poorer than chance guessing under both of these conditions, $t\ (53) = 2.21$, $p < .05$, and $t\ (61) = 1.96$, $p < .05$, respectively.

Conclusions. Even though the "selective translation" lists (the Hi-PS and Lo-PS lists) were not constructed on the basis of a translator's subjective judgment which Taylor and Taylor (1965) no doubt meant when they used the term "selectivity", the results demonstrate that two lists of antonym pairs may be

deliberately constructed when alternative translations are available, one resulting in significantly better than chance guessing (thus demonstrating phonetic symbolism), and the other showing significantly poorer than chance guessing (thus demonstrating the opposite of what phonetic symbolism would predict).

In the second study the question asked was whether it is easier for subjects to learn the meaning of a foreign-language word when it is the alternative translation which shows a higher guessing rate as compared to learning the meaning of the other alternative translation which shows a lower guessing rate.

Subjects. Two groups of 22 college students with about equal numbers of males and females in each group served as subjects. None of them had previous exposure to the Japanese language.

Procedure. Two lists of 12 words in each were constructed with six antonym pairs which consistently indicated large proportions of correct guesses for one alternative translation in Japanese (Hi-PS Word list) and smaller proportions for another translation (Lo-PS Word list).

One group of Ss (N = 22) individually learned the Hi-PS Word list with the paired-associate technique. Another group (N = 22) learned the Lo-PS Word list. After an English word was shown for four seconds, its Japanese translation was presented together with the English word for four seconds. Both English and Japanese words were typed (elite) on 3 x 2.5 in. cards. The sequence of presentation of the 12 words was randomized for each trial. Each subject was trained until he reached the criterion of two consecutive perfect runs.

Results. The Hi-PS Word list and the Lo-PS Word list resulted in significant differences in terms of the number of errors to the criterion, $t\ (42) = 2.65$,

$p < .01$, and the number of trials to the criterion, $t\ (42) = 2.18$, $p < .05$ in favor of the Hi-PS Word list.

Conclusions. The cues that helped the English-speaking Ss to make correct guesses of the meanings of the Japanese words also facilitated the learning of the meaning of the words. Words with higher correct guessing rates were learned with significantly less number of errors and of trials.

How stable is one's capacity for phonetic symbolism? The third study attempted to answer this question by having Ss guess the meanings of foreign-language words in two equivalent lists which were administered four weeks and eight weeks apart.

Subjects. Subjects were college students enrolled in introductory and advanced general psychology courses. Both sexes were about equally represented in all groups. Individuals who had any knowledge of the Japanese language were excluded as subjects.

Procedure. Two lists with 44 antonym pairs in each were constructed. Thirty-four antonym pairs were the same for the two lists. Ten additional antonym pairs for each list were randomly selected from a large number of antonym pairs. In each list the order of presentation and the sequence of the members in each antonym pair were randomized. The Ss guessed the meanings of Japanese words in antonym pairs with the word-matching technique.

One groups ($N = 57$) guessed the meanings of the Japanese words under the graphemic condition. Another group ($N = 81$) did so under the graphemic-monotone condition. For these two groups a four-week interval was allowed between the two administrations of the antonym lists. A third group ($N = 20$) responded under the graphemic-monotone condition with an eight-week interval between the administrations of two lists.

Results. The product-moment correlation coefficient computed between the scores representing correct guesses on two lists for the first group failed to reach the level of significance at $p = .05$, $r = .24$, $p\ (56) < .07$. However, for the second and third groups the coefficients were statistically significant, $r = .27$, $p\ (80) < .02$ and $r = .51$, $p\ (19) < .02$, respectively.

Conclusions and implications. One's capacity for phonetic symbolism is likely to be a stable characteristic. The second study demonstrated that English-speaking subjects learned Japanese words which show higher guessing rates with less number of errors and trials than words which showed lower guessing rates.

If words of a particular foreign language which show higher guessing rates are easier to learn than those which show lower guessing rates for the members of a language community, whether it is due to some innate characteristics of the sounds or the artifact of selective translation and/or expressive voice quality, it is a variable to be considered in selecting words in writing introductory textbooks for the foreign language. Whether one's capacity for phonetic symbolism is related to one's aptitude to learn foreign languages is yet to be explored and demonstrated.

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